

What is claimed is:

[Claim 1] 1. A dual microphone module communication device for a teleconference system, comprising, within each microphone port (a teleconference system can have multiple microphone ports):

a first microphone module for receiving a near-end audio signal and amplifying the near-end audio signal to produce a first audio signal;
a second microphone module for receiving the near-end audio signal, wherein the second microphone module has a fixed gain and the second microphone module shifts a phase of the near-end audio signal to produce a second audio signal with a phase difference relative to the near-end audio signal; and
a mixer circuit for receiving the first audio signal and the second audio signal and subtracting the second audio signal from the first audio signal to produce a third audio signal.

[Claim 2] 2. The communication device of claim 1, wherein the device further comprises:

a loudspeaker; and
a control unit coupled to the mixer circuit and the loudspeaker, wherein the control unit receives a far-end audio signal from a far-end communication terminal via a communication network and broadcasts the far end audio signal through the loudspeaker, and the control unit also converts the third audio signal into an electrical audio frequency signal and transmits the audio frequency signal to the far-end communication terminal via the communication network.

[Claim 3] 3. The communication device of claim 2, wherein the first microphone and the second microphone faces a predetermined direction for receiving the near-end audio signal and the loudspeaker faces a direction within a range just opposite to the predetermined direction, and the direction in which the loudspeaker outputs the far-end audio signal is opposite to the predetermined direction.

[Claim 4] 4. The communication device of claim 1, wherein the first microphone module further comprises:

a first microphone for receiving the near-end audio signal; and
a gain modulation circuit coupled to the output terminal of the first microphone for amplifying the near-end audio signal to produce the first audio signal and transmitting the first audio signal to the mixer circuit.

[Claim 5] 5. The communication device of claim 1, wherein the second microphone module further comprises:

a second microphone for receiving the near-end audio signal; and
a phase-shift circuit coupled to the output terminal of the second microphone, wherein the phase-shift circuit has a fixed gain and the phase-shift circuit shifts the phase of the near-end audio signal to produce the second audio signal with a phase difference relative to the near-end audio signal before sending the second audio signal to the mixer circuit.

[Claim 6] 6. The communication device of claim 1, wherein the mixer circuit further comprises a subtraction unit with a first signal input terminal and a second signal input terminal such that the subtraction unit subtracts the second audio signal from the first audio signal to produce the third audio signal after the first signal input terminal has received the first audio signal and the second signal input terminal has received the second audio signal.

[Claim 7] 7. The communication device of claim 1, wherein the near-end audio signal further comprises an acoustic signal produced by a user or a loudspeaker.

[Claim 8] 8. A teleconference system, comprising:

a control unit;

an input module, having a first audio signal input terminal and a second audio signal input terminal for receiving a near-end audio signal, wherein the near-end audio signal fed to the first audio signal input terminal is amplified to produce a first audio signal, the near-end audio signal fed to the second audio signal input terminal is provided with a fixed gain and phase-shifted to

produce the second audio signal with a phase difference relative to the near-end audio signal, and the input module also subtracts the second audio signal from the first audio signal to produce a third audio signal;
an output module for outputting a far-end audio signal; and
a communication network coupled to the control unit and a far-end communication terminal,
wherein the control unit picks up the far-end audio signal from the far-end communication terminal via the communication network and broadcasts the audio message through the output module, and the control unit also transmits the third audio signal to the far-end communication terminal via the communication network.

[Claim 9] 9. The teleconference system of claim 8, wherein the input module faces a predetermined direction for receiving the near-end audio signal and the output module faces a direction within a range just opposite to the predetermined direction, and the direction in which the output module outputs the far-end audio signal is opposite to the predetermined direction.

[Claim 10] 10. The teleconference system of claim 8, wherein the input module further comprises:

a gain modulation circuit coupled to the first audio signal input terminal for amplifying the near-end audio signal to produce the first audio signal;
a phase-shift circuit coupled to the second audio signal input terminal for fixing the gain of the near-end audio signal and shifting the phase of the near-end audio signal by a definite amount to produce the second audio signal; and
a subtraction unit with a first signal input terminal, a second signal input terminal and an output terminal, wherein the subtraction unit subtracts the second audio signal from the first audio signal to produce the third audio signal at the output terminal after the first signal input terminal has received the first audio signal and the second signal input terminal has received the second audio signal.

[Claim 11] 11. The teleconference system of claim 8, wherein the output module comprises a loudspeaker.

[Claim 12] 12. The teleconference system of claim 8, wherein the communication network comprises a public telephone exchange network.

[Claim 13] 13. The teleconference system of claim 8, wherein the near-end audio signal comprises an acoustic signal produced by a user of an output module.

[Claim 14] 14. A method of carrying out a teleconference, comprising:

receiving a near-end audio signal from a near-end communication terminal;
amplifying the near-end audio signal to produce a first audio signal;
fixing the gain of the near-end audio signal and shifting the phase of the near-end audio signal by a definite amount to produce a second audio signal;
and
subtracting the second audio signal from the first audio signal to produce a third audio signal and transmitting the third audio signal to a far-end communication terminal.

[Claim 15] 15. The method of claim 14, wherein the step of transmitting the third audio signal to the far-end communication terminal comprises:

converting the third audio signal into an electrical audio frequency signal; and
transmitting the electrical audio frequency signal to the far-end communication terminal via a communication network.

[Claim 16] 16. The method of claim 14, wherein the communication network comprises a public telephone exchange network.

[Claim 17] 17. The method of claim 14, wherein the near-end audio signal comprises an acoustic signal produced by at least one user.